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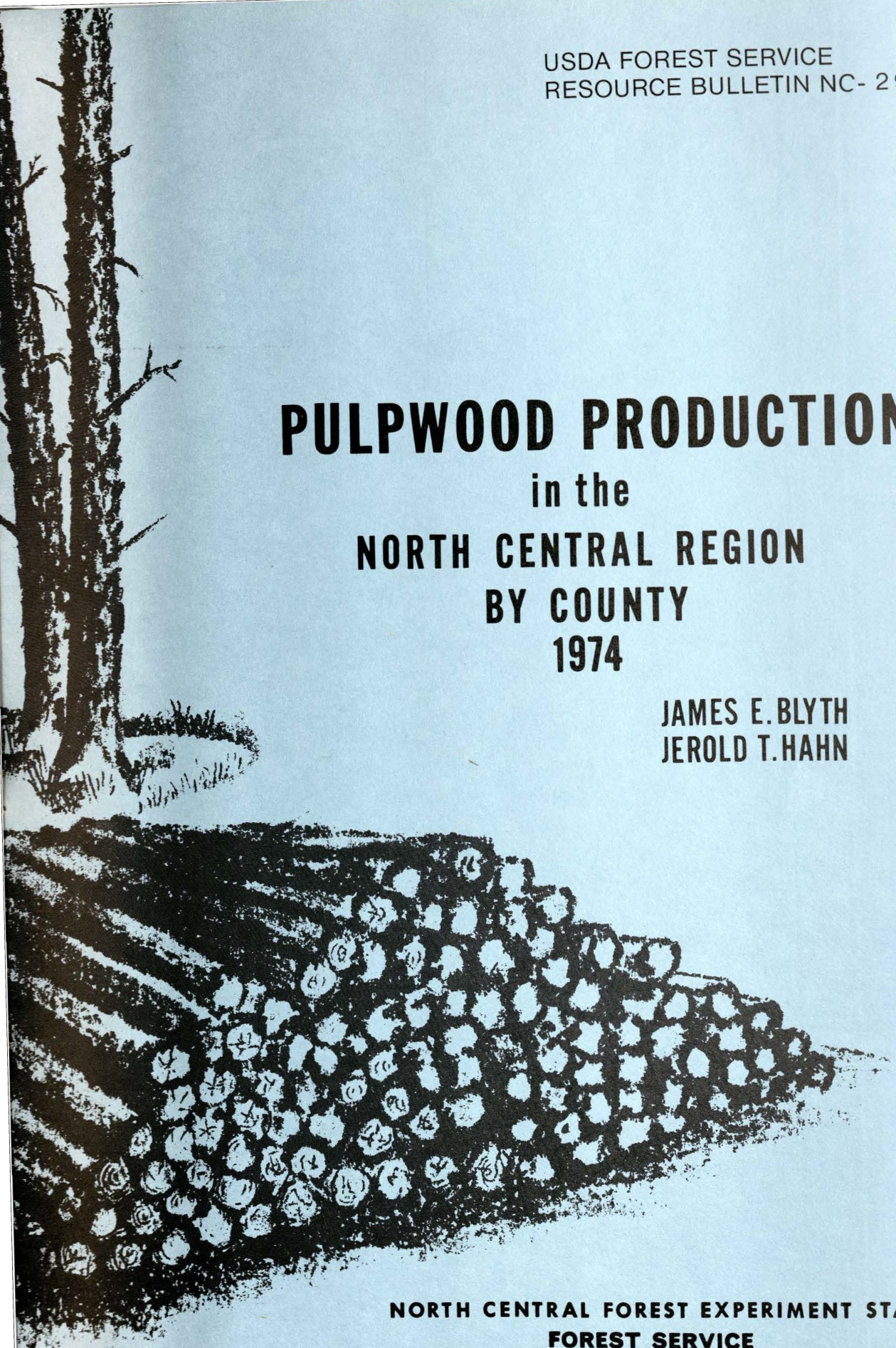

PULPWOOD PRODUCTION
in the
NORTH CENTRAL REGION
BY COUNTY
1974

JAMES E. BLYTH
JEROLD T. HAHN

NORTH CENTRAL FOREST EXPERIMENT STATION
FOREST SERVICE
U. S. DEPARTMENT OF AGRICULTURE

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1976

Correction sheet for RB-NC-29.
"PULPWOOD PRODUCTION IN THE NORTH CENTRAL REGION BY COUNTY, 1974"
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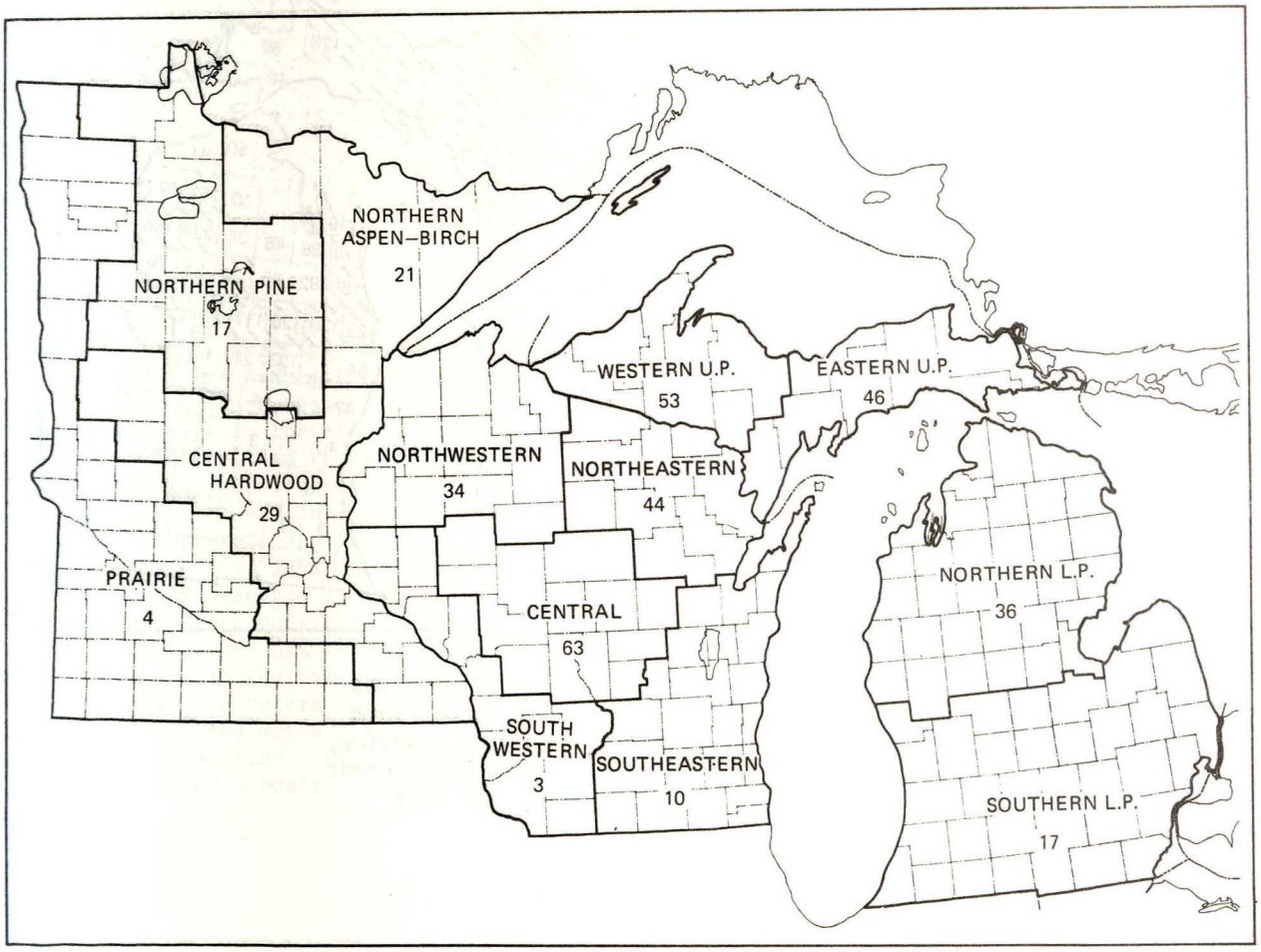

Figure 1.--*Cords of pulpwood bolts and logs harvested per 1,000 cords of merchantable volume in principal pulpwood species by Forest Survey Unit, 1974. (The heavy lines delineate the boundaries of the Forest Survey Units in each State.)*

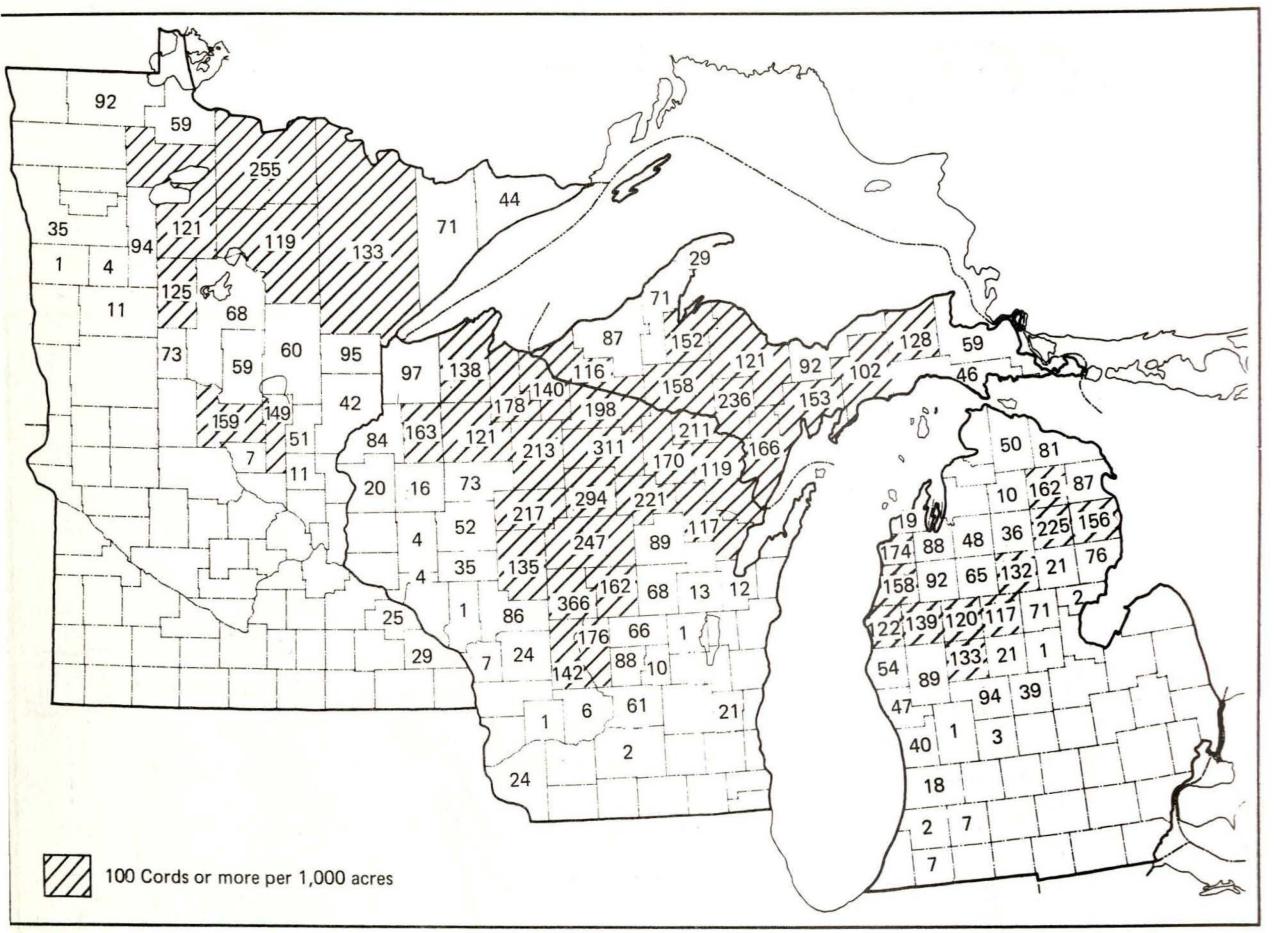

Figure 2.--*Cords of pulpwood cut per 1,000 acres of stocked commercial forest land in principal pulpwood-producing counties, 1974. Acres of stocked commercial forest land were determined during the last forest survey in each State.*

Corrected title for Table 11, page 20.

Table 11.--*Lake States pulpwood production by county and species, 1974*

(In standard cords, roughwood basis)

The cooperation of pulpmills using North Central States timber in 1973 is gratefully acknowledged. Thanks are also due the Michigan Department of Natural Resources for collecting data on the Michigan pulpmills.

THE AUTHORS

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Table 1.--*Production and imports of pulpwood, Lake States, 1974*
(In standard cords, unpeeled)

SPECIES AND DESTINATION	PRODUCTION BY STATES 1/				IMPORTS			TOTAL RECEIPTS
	MICHIGAN	MINNESOTA	WISCONSIN	REGIONAL TOTAL	OTHER U.S. 2/	CANADA	TOTAL IMPORTS	
BALSAM FIR								
MICHIGAN	32719	0	614	33333	0	0	0	33333
MINNESOTA	0	84107	0	84107	0	0	0	84107
WISCONSIN	41649	7140	84578	133367	0	66	66	133433
EXPORTED 3/	0	1064	0	1064	0	0	0	0
TOTAL	74368	92311	85192	251871	0	66	66	250873
CEDAR								
MICHIGAN	4665	0	242	4907	0	0	0	4907
TOTAL	4665	0	242	4907	0	0	0	4907
HEMLOCK								
MICHIGAN	27049	0	1427	28476	0	0	0	28476
WISCONSIN	25484	0	43244	68728	0	0	0	68728
TOTAL	52533	0	44671	97204	0	0	0	97204
JACK PINE								
MICHIGAN	99979	0	348	100327	0	0	0	100327
MINNESOTA	0	162253	0	162253	1340	17855	19195	181448
WISCONSIN	90979	59408	196843	347230	47842	1501	49343	396573
EXPORTED 3/	0	979	0	979	0	0	0	0
TOTAL	190958	222640	197191	610789	49182	19356	68538	678348
RED PINE								
MICHIGAN	49904	0	1092	50996	0	0	0	50996
MINNESOTA	0	3499	0	3499	0	0	0	3499
WISCONSIN	8876	5622	79326	93824	0	0	0	93824
TOTAL	58780	9121	80418	148319	0	0	0	148319
WHITE PINE								
MICHIGAN	4769	0	238	5007	0	0	0	5007
MINNESOTA	0	7557	0	7557	0	0	0	7557
WISCONSIN	4194	0	13127	17321	0	0	0	17321
TOTAL	8963	7557	13365	29885	0	0	0	29885
SPRUCE								
MICHIGAN	12053	0	41	12094	0	0	0	12094
MINNESOTA	0	141950	0	141950	0	300	300	142250
WISCONSIN	27586	56989	19267	103842	0	57327	57327	161169
EXPORTED 3/	0	7623	0	7623	0	0	0	0
TOTAL	39639	206562	19308	265509	0	57627	57627	315513
TAMARACK								
MICHIGAN	791	0	40	831	0	0	0	831
MINNESOTA	0	10003	0	10003	0	0	0	10003
WISCONSIN	922	33268	1517	35707	0	0	0	35707
TOTAL	1713	43271	1557	46541	0	0	0	46541
ASH								
MICHIGAN	9433	0	167	9600	0	0	0	9600
WISCONSIN	2643	337	41450	44430	0	0	0	44430
EXPORTED 3/	174	0	99	273	0	0	0	0
TOTAL	12250	337	41716	54303	0	0	0	54030
ASPEN								
MICHIGAN	476065	0	5389	481454	0	0	0	481454
MINNESOTA	0	712357	0	712357	0	5895	5895	718252
WISCONSIN	227987	90056	791341	1109384	0	69	69	1109453
EXPORTED 3/	2293	1410	502	4205	0	0	0	0
TOTAL	706345	803823	797232	2307400	0	5964	5964	2309159

(TABLE 1 CONTINUED ON NEXT PAGE)

(TABLE 1 CONTINUED)

SPECIES AND DESTINATION	PRODUCTION BY STATES 1/				IMPORTS			TOTAL RECEIPTS
	MICHIGAN	MINNESOTA	WISCONSIN	REGIONAL TOTAL	OTHER U.S. 2/	CANADA	TOTAL IMPORTS	
BALSAM POPLAR								
MICHIGAN	34942	0	1481	36423	0	0	0	36423
MINNESOTA	0	23720	0	23720	0	5751	5751	29471
WISCONSIN	17	0	0	17	0	0	0	17
EXPORTED 3/	42	0	0	42	0	0	0	0
TOTAL	35001	23720	1481	60202	0	5751	5751	65911
BASSWOOD								
MICHIGAN	1485	0	0	1485	0	0	0	1485
WISCONSIN	17	1	6629	6647	0	0	0	6647
EXPORTED 3/	216	0	113	329	0	0	0	0
TOTAL	1718	1	6742	8461	0	0	0	8132
BEECH								
MICHIGAN	28724	0	1416	30140	0	0	0	30140
WISCONSIN	978	0	3773	4751	0	0	0	4751
EXPORTED 3/	576	0	0	576	0	0	0	0
TOTAL	30278	0	5189	35467	0	0	0	34891
WHITE BIRCH								
MICHIGAN	58407	22	1558	59987	0	0	0	59987
MINNESOTA	0	37387	0	37387	0	0	0	37387
WISCONSIN	5876	6060	73612	85548	0	0	0	85548
EXPORTED 3/	155	526	251	932	0	0	0	0
TOTAL	64438	43995	75421	183854	0	0	0	182922
YELLOW BIRCH								
MICHIGAN	16832	0	543	17375	0	0	0	17375
WISCONSIN	3433	36	25719	29188	0	0	0	29188
TOTAL	20265	36	26262	46563	0	0	0	46563
COTTONWOOD								
MICHIGAN	126	0	0	126	0	0	0	126
MINNESOTA	0	1005	0	1005	0	0	0	1005
EXPORTED 3/	0	0	18	18	0	0	0	0
TOTAL	126	1005	18	1149	0	0	0	1131
ELM								
MICHIGAN	10447	0	346	10793	0	0	0	10793
MINNESOTA	0	1650	0	1650	0	0	0	1650
WISCONSIN	14815	515	133380	148710	0	0	0	148710
EXPORTED 3/	808	0	212	1020	0	0	0	0
TOTAL	26070	2165	133938	162173	0	0	0	161153
HICKORY								
WISCONSIN	95	0	1308	1403	0	0	0	1403
TOTAL	95	0	1308	1403	0	0	0	1403
HARD MAPLE								
MICHIGAN	77870	0	3527	81397	0	0	0	81397
WISCONSIN	32521	897	126628	160046	0	0	0	160046
EXPORTED 3/	185	0	186	371	0	0	0	0
TOTAL	110576	897	130341	241814	0	0	0	241443
SOFT MAPLE								
MICHIGAN	78947	0	1823	80770	0	0	0	80770
WISCONSIN	10172	330	74001	84503	0	0	0	84503
EXPORTED 3/	350	0	125	475	0	0	0	0
TOTAL	89469	330	75949	165748	0	0	0	165273

(TABLE 1 CONTINUED ON NEXT PAGE)

(TABLE 1 CONTINUED)

SPECIES AND DESTINATION	PRODUCTION BY STATES 1/				IMPORTS			TOTAL RECEIPTS
	MICHIGAN	MINNESOTA	WISCONSIN	REGIONAL TOTAL	OTHER U.S. 2/	CANADA	TOTAL IMPORTS	
RED OAK								
MICHIGAN	98437	0	159	98596	0	0	0	98596
MINNESOTA	0	6851	0	6851	0	0	0	6851
WISCONSIN	41	162	80130	80333	0	0	0	80333
EXPORTED 3/	53	0	1408	1461	0	0	0	0
TOTAL	98531	7013	81697	187241	0	0	0	185780
WHITE OAK								
MICHIGAN	4940	0	0	4940	0	0	0	4940
WISCONSIN	39	14	15502	15555	0	0	0	15555
EXPORTED 3/	0	0	529	529	0	0	0	0
TOTAL	4979	14	16031	21024	0	0	0	20495
OTHER HARDWOODS								
MICHIGAN	13954	0	693	14647	0	0	0	14647
MINNESOTA	0	1005	0	1005	0	0	0	1005
WISCONSIN	997	14	10482	11493	0	0	0	11493
TOTAL	14951	1019	11175	27145	0	0	0	27145
TOTAL ROUNDWOOD								
MICHIGAN	1142538	22	21144	1163704	0	0	0	1163704
MINNESOTA	0	1193344	0	1193344	1340	29801	31141	1224485
WISCONSIN	499321	260849	1821857	2582027	47842	58963	106805	2688832
EXPORTED 3/	4852	11602	3443	19897	0	0	0	0
TOTAL	1646711	1465817	1846444	4958972	49182	88764	137946	5077021
RESIDUE, SOFTWOOD								
MICHIGAN	8932	0	527	9459	0	0	0	9459
MINNESOTA	0	34034	0	34034	10853	27839	38692	72726
WISCONSIN	3854	106	24215	28175	220907	7739	228646	256821
EXPORTED 3/	3948	773	1130	5851	0	0	0	0
TOTAL	16734	34913	25872	77519	231760	35578	267338	339006
RESIDUE, HARDWOODS								
MICHIGAN	138273	0	2992	141265	9298	0	9298	150563
MINNESOTA	0	69612	14455	84067	3314	7817	11131	95198
WISCONSIN	31095	590	157591	189276	0	0	0	189276
EXPORTED 3/	9728	6576	5472	21776	0	0	0	0
TOTAL	179096	76778	180510	436384	12612	7817	20429	435037
ALL WOOD MATERIAL								
MICHIGAN	1289743	22	24663	1314428	9298	0	9298	1323726
MINNESOTA	0	1296990	14455	1311445	15507	65457	80964	1392409
WISCONSIN	534270	261545	2003663	2799478	268749	66702	335451	3134929
EXPORTED 3/	18528	18951	10045	47524	0	0	0	0
TOTAL	1842541	1577508	2052826	5472875	293554	132159	425713	5851064

1/ VERTICAL COLUMNS OF FIGURES UNDER BOX HEADING -PRODUCTION BY STATES- PRESENT THE AMOUNT OF PULPWOOD CUT IN EACH STATE.
2/ MOSTLY WESTERN STATES.
3/ PULPWOOD SHIPPED TO MILLS OUTSIDE OF REGION.
4/ PONDEROSA PINE.

Pulpwood cutting from all species groups, except spruce, increased. Major gains were in aspen (271,000 cords) and pine (149,000 cords). Aspen harvesting rose more than 100,000 cords from the previous peak of 1966 while pine harvesting spurted more than 67,000 cords above its 1966 peak. Harvests of birch, tamarack, and miscellaneous hardwoods[3] advanced to record levels also.

Because this is the first report with detailed species information on pine, birch, and miscellaneous hardwoods, these groups are discussed below.

More than three-fourths (77 percent) of the pine cut was jack pine. Four-fifths of the birch harvest was white birch (table 2). Hard maple, red oak, soft maple, and elm constituted 78 percent of the miscellaneous hardwoods production (table 3).

Table 2.--*Lake States roundwood pulpwood production from pine and birch by State, 1974*

(In thousand cords)

Species	Production			
	Michigan	Minnesota	Wisconsin	Total
Jack pine	191	223	197	611
Red pine	59	9	80	148
White pine	9	8	13	30
TOTAL	259	240	290	789
BIRCH				
White birch	64	44	75	184
Yellow birch	20	*	26	46
TOTAL	84	44	101	230

* Less than 500 cords.

Wisconsin--The 2.05 million cord output was 294,000 cords higher than in 1973. Miscellaneous hardwoods (primarily maple and red oak) and pine led the advance, but cutting of all principal species increased. Although production rose in all parts of the State, the greatest gain was in central Wisconsin. Oneida, Price, and Lincoln counties led all others.

Michigan--Producers boosted their output sharply (16 percent) to 1.84 million cords. The largest gains were in aspen (103,000 cords), pine (55,000 cords), and miscellaneous hardwoods (59,000 cords). Output climbed more (129,000 cords) in the western Upper Peninsula than elsewhere. Top-producing counties were Marquette, Iron, and Dickinson.

Minnesota--Production increased to 1.58 million cords with the largest gain in aspen (131,000 cords). Demand for Minnesota pulpwood has expanded for three consecutive years. Northeastern Minnesota supplies more than half (58 percent) of the States pulpwood production. Top-producing counties were St. Louis, Koochiching, and Itasca.

The distribution of the harvest is shown in two ways: first, the amount of pulpwood cut relative to the merchantable

Table 3.--*Lake States roundwood pulpwood production from miscellaneous hardwoods by species and State, 1974*

(In thousand cords)

Miscellaneous hardwoods	Production (thousand cords)			
	Michigan	Minnesota	Wisconsin	Total
Hard maple	111	1	130	242
Red oak	98	7	82	187
Soft maple	90	*	76	166
Elm	26	2	134	162
Balsam poplar	35	24	1	60
Ash	12	*	42	54
Beech	30	-	5	35
White oak	5	*	16	21
Basswood	2	*	7	9
Other miscellaneous hardwoods	15	2	13	30
TOTAL	424	36	506	966

* Less than 500 cords.

[3] *Miscellaneous hardwoods are all hardwoods except birch and aspen.*

volume in major pulpwood species (fig. 1); and second, the amount of pulpwood cut relative to commercial forest area (fig. 2). Heaviest cutting pressure (per 1,000 cords of merchantable volume in principal pulpwood species) was in central Wisconsin and western Upper Michigan.

Receipts

Forty-one Lake States pulpmills received 5.85 million cords of pulpwood in 1974. Eight more mills used birch and four more used residue chips than in 1973 (table 4).

Receipts of spruce fell, but increased for other major species. For the fourth successive year, the proportion of hardwood procured increased. Two-thirds of the receipts was hardwood compared with 58 percent a decade earlier. Demand for softwood residue dropped slightly after rising each of the previous 5 years.

Canada furnished 31 percent of the imported wood. Softwood imports from Canada in 1974 slipped to the lowest recorded level. Deliveries of Canadian softwood roundwood continued the irregular long term downtrend established in 1952, but were partially offset by greater receipts of Canadian softwood residues. In 1969, the first Canadian softwood residue entered the Lake States for pulping and Canada now appears to be an established source.

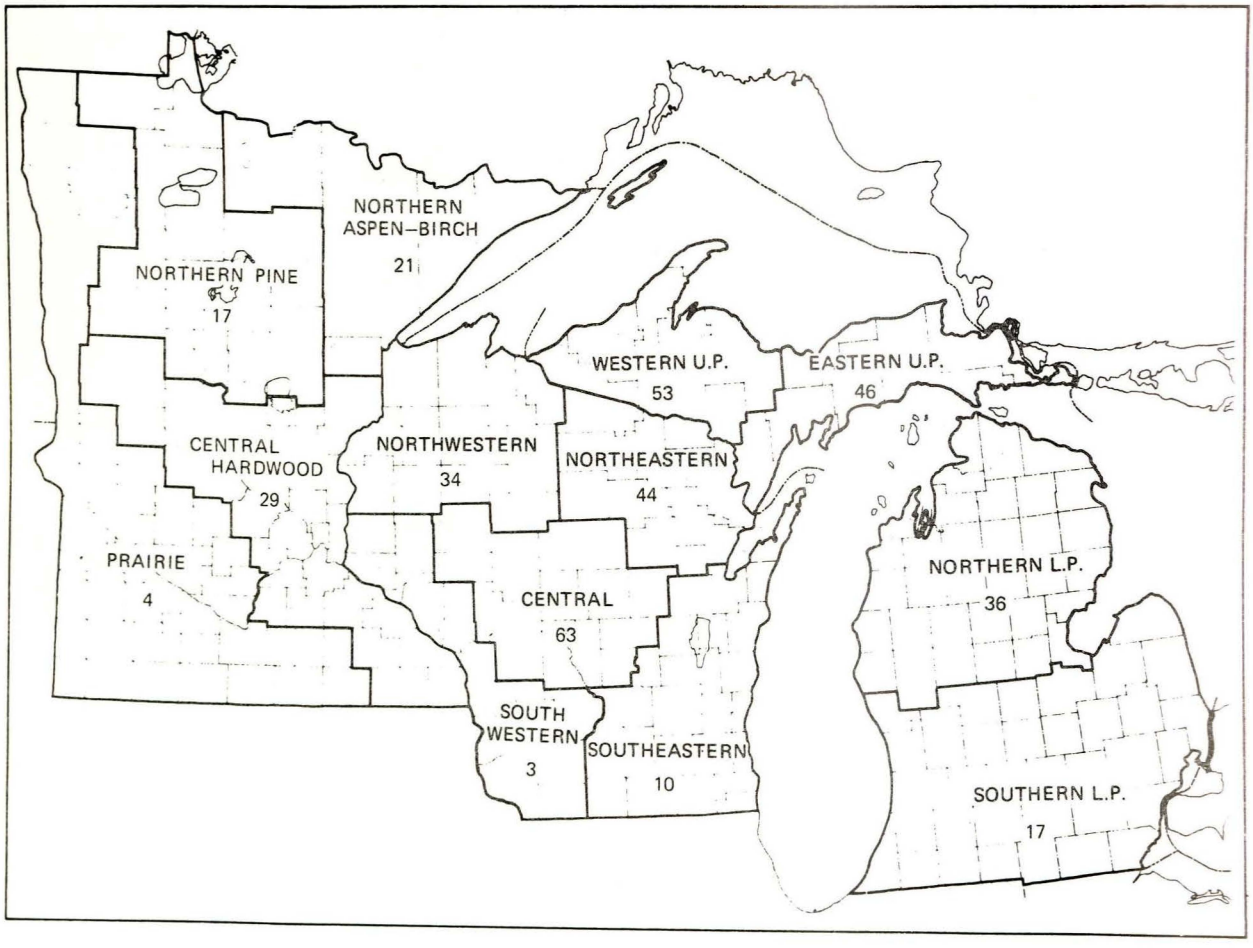


Figure 1.--*Cords of pulpwood belts and logs harvested per 1,000 cords of merchantable volume in principal pulpwood species by Forest Survey Unit, 1974. (The heavy lines delineate the boundaries of the Forest Survey Units in each State.)*

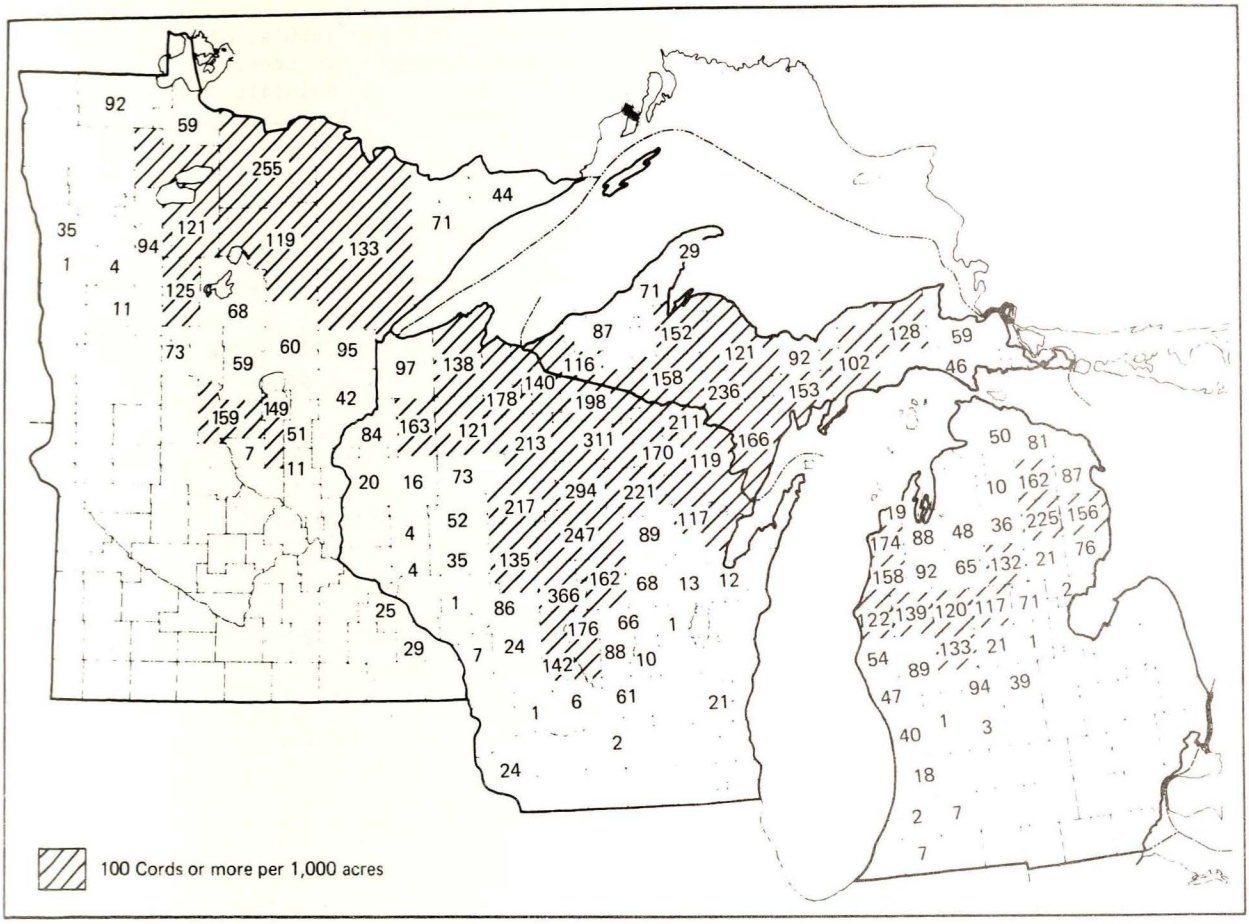


Figure 2.--*Cords of pulpwood cut per 1,000 acres of stocked commercial forest land in principal pulpwood-producing counties, 1974. Acres of stocked commercial forest land were determined during the last forest survey in each State.*

Table 4.--*Plants using the different species of wood for pulping in 1974*
(In numbers)

Species and kind of material	Lake States	Minnesota	Wisconsin	Michigan
Aspen	39	9	22	8
Balsam fir	18	5	10	3
Birch	21	2	13	6
Hemlock	12	-	9	3
Pine	12	2	6	4
Spruce	21	5	13	3
Tamarack	6	1	4	1
Maple	17	-	10	7
Oak	12	2	5	5
Other hardwoods	19	2	11	5
Wood chips (residue)	20	6	9	5
Slabwood and other residue	6	1	3	2
Total Plants1/	41	9	24	8

1/ Some plants use more than one species, so numbers in columns cannot be added.

Western States supplied all but 4 percent of the imports from other parts of the United States. Wyoming and South Dakota each provided more than 70,000 cords, primarily as softwood chips.

Wisconsin--Wood deliveries surged ahead 438,000 cords, despite a large drop in spruce requirements. Pine and hardwood roundwood markets were excellent.

Minnesota--Pulpwood marketing expanded 169,000 cords. Demand for aspen and pine was strong; birch and hardwood residue markets weakened.

Michigan--Pulpwood demand rose moderately (125,000 cords), mainly in aspen. Hemlock, balsam fir, tamarack, spruce, and softwood residue markets slackened. Michigan mills received only 3 percent of the softwood residue deliveries in the Lake States.

Industry Trends and Analysis

Pulpmill capacity expanded from 10.0 to 10.2 thousand tons per day (table 5). Increases were in the sulfite and mechanical processes. No mills closed or changed ownership. The industry is continuing to invest significantly in pollution control equipment and in sawmills. Captive sawmills supply a reliable quantity of pulpwood from their residues.

During the last decade (1965-1974), Lake States pulpwood production did not keep pace with the national trend (fig. 3). In 1964, the Lake States produced 7.5 percent of the nation's pulpwood; in 1974, they produced 6.9 percent. During this period, pulp and paper industry growth was concentrated in the South. From 1971 to 1974, however, the Lake States relative position improved by 1 percent (from 5.9 to 6.9).

Aspen has been the dominant Lake States pulpwood species for many years, but its position is slipping (fig. 4). During the 1964-1971 period, aspen pulpwood output hovered close to half the total. By 1974, it had declined to 42 percent. Other hardwoods, both roundwood and residue, are increasing as a proportion of all pulpwood cut.

Pine and other softwood roundwood output has been stable since 1964. Use of Lake States softwood residue, minimal from 1964 to 1969, has risen every year since 1969 and is becoming more prominant in the pulpwood mix.

In the early 1960's, Michigan was the leading pulpwood producer. In 1967 Wisconsin took the lead and maintained it (fig. 5). Wisconsin production rose substantially in the last 10 years because the State's pulpmills increased their use of local wood from 53 percent of their requirements in 1964 to 64 percent in 1974. The greater use of hardwoods created opportunities for the mills to purchase more wood locally.

Minnesota almost overtook Michigan in production during 1972. Then, a large Michigan pulpmill expanded its capacity and purchased much more Michigan wood. Consequently, Michigan pulled away from Minnesota in production during 1973-1974.

CENTRAL STATES

Production

Central States producers raised their pulpwood output to 486,000 cords, a 7 percent gain over 1973. Production rose because mills outside the Central States increased their pulpwood purchases from the region. Most of the gain came from hardwood residue, which increased to 58 percent of pulpwood output (table 6).

Missouri outproduced Illinois for the first time and may not relinquish its new position. Missouri has several large markets within and near the Central States. In 7 of the last 8 years, Missouri expanded its output an average of 25 percent per year.

Loggers harvested pulpwood in 120 counties: 39 in Missouri, 34 in Illinois, 31 in Indiana, and 16 in Iowa (fig. 6). The pulpwood harvest area shrank in southwest Illinois and south central Indiana. Meanwhile, harvesting expanded to 4 more counties in Missouri and 3 more in Iowa than in 1973.

Receipts

The 13 Central States' mills received 353,000 cords of pulpwood, which is down 7 percent from 1973. More of their wood came from the Central States than in 1973. Imports declined 28,000 cords--15,000 cords of roundwood and 13,000 cords of residue. The mills bought hardwood residue heavily. Soft hardwood receipts fell to their lowest level since 1955. After recording peak receipts in 1973, Illinois mills procured 17 percent less wood.

Table 5.--*Active woodpulp mills in the Lake States by location, type of pulp produced, and capacity, 1974*

COMPANY	LOCATION	MILL CAPACITY IN TONS PER 24 HOURS 1/				
		TOTAL	SULFITE	SULFATE	GROUNDWOOD AND OTHER MECHANICAL	SEMI-CHEMICAL
MICHIGAN:						
ABITIBI CORP.	ALPENA	430	0	0	430	0
CELOTEX CORP.	L ANSE	270	0	0	270	0
HOERNER WALDORF CORP.	ONTONAGON	220	0	0	0	220
MANISTIQUE PULP AND PAPER CO.	MANISTIQUE	90	0	0	90	0
MEAD CORP.	ESCANABA	750	0	600	150	0
MENASHA CORP.	OTSEGO	225	0	0	0	225
PACKAGING CORP.OF AMERICA	FILER CITY	400	0	0	0	400
WARREN CO., S.D.	MUSKEGON	240	0	240	0	0
TOTAL.....	8 PLANTS.....	2625	0	840	940	845
MINNESOTA :						
BLANDIN PAPER CO.	GRAND RAPIDS	250	0	0	170	80
HENNEPIN PAPER CO.	LITTLE FALLS	75	0	0	75	0
BOISE CASCADE CORP.	INTERNATIONAL FALLS	770	0	320	450	0
POTLATCH CORP.	CLOQUET	520	120	400	0	0
SUPERWOOD CORP.	BEMIDJI	90	0	0	90	0
ST REGIS PAPER CO.	SARTELL	125	0	0	125	0
SUPERWOOD CORP.	DULUTH	350	0	0	350	0
HOERNER WALDORF CORP.	ST PAUL	300	0	0	0	300
CONWED CORP.	CLOQUET	350	0	0	350	0
TOTAL.....	9 PLANTS.....	2830	120	720	1610	380
WISCONSIN :						
AMERICAN CAN CO.	GREEN BAY	210	150	0	60	0
WEYERHAUSER CO.	ROTHSCHILD	200	200	0	0	0
BADGER PAPER MILLS	PESHTIGO	110	110	0	0	0
APPLETON PAPERS INC.	COMBINED LOCKS	200	0	0	200	0
CONSOLIDATED PAPERS , INC.	APPLETON	175	175	0	0	0
CONSOLIDATED PAPERS , INC.	STEVENS POINT	100	0	0	100	0
CONSOLIDATED PAPERS , INC.	WISCONSIN RAPIDS	625	0	400	225	0
GREEN BAY PACKAGING, INC.	GREEN BAY	200	0	0	0	200
FLAMBEAU PAPER CO.	PARK FALLS	115	115	0	0	0
KIMBERLY-CLARK CORP.	KIMBERLY	115	0	0	115	0
PENTAIR INDUSTRIES	NIAGARA	170	0	0	170	0
MOSINEE PAPER MILLS CO.	MOSINEE	200	0	200	0	0
NEKOOSA-EDWARDS PAPER CO.	NEKOOSA	310	0	310	0	0
NEKOOSA-EDWARDS PAPER CO.	PORT EDWARDS	215	215	0	0	0
OWENS-ILLINOIS	TOMAHAWK	620	0	0	0	620
CHARMIN PAPER PRODUCTS CO.	GREEN BAY	2/	2/	2/	2/	2/
SCOTT PAPER CO.	OCONTO FALLS	110	110	0	0	0
ST REGIS PAPER CO.	RHINELANDER	120	120	0	0	0
FLINKOTE COMPANY	CORNELL	50	0	0	50	0
SUPERIOR FIBRE PRODUCTS CO.	SUPERIOR	180	0	0	180	0
THILMANY PULP AND PAPER CO	KAUKAUNA	400	0	400	0	0
TOMAHAWK PULP CO., INC.	TOMAHAWK	50	0	0	50	0
WAUSAU PAPER MILLS CO.	BROKAW	185	185	0	0	0
EVANS PRODUCTS CO.	PHILLIPS	100	0	0	100	0
TOTAL.....	24 PLANTS.....	4760	1380	1310	1250	820
ALL STATES	41 PLANTS	10215	1500	2870	3800	2045

1/ LOCKWOOD S DIRECTORY OF THE PAPER AND ALLIED INDUSTRIES-1975, AND 1975 DIRECTORY OF THE FOREST PRODUCTS INDUSTRY.

2/ CAPACITY NOT AVAILABLE.

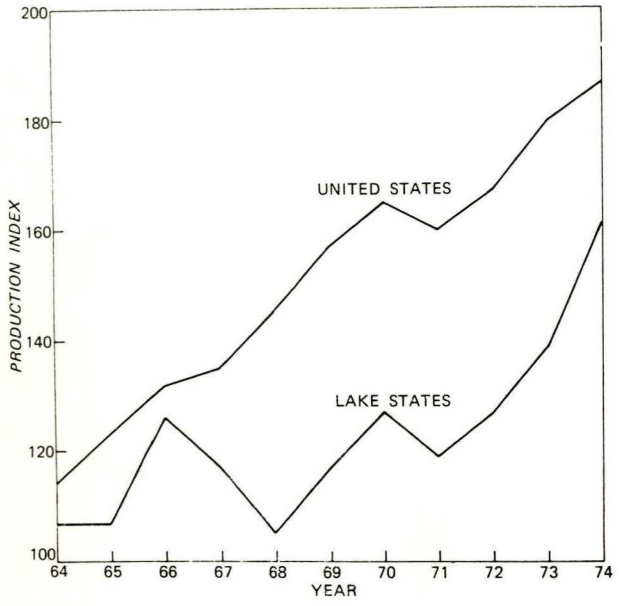


Figure 3.--*United States and Lake States pulpwood production indices, 1964-1974. Average annual production for 1961-1963 = 100.*

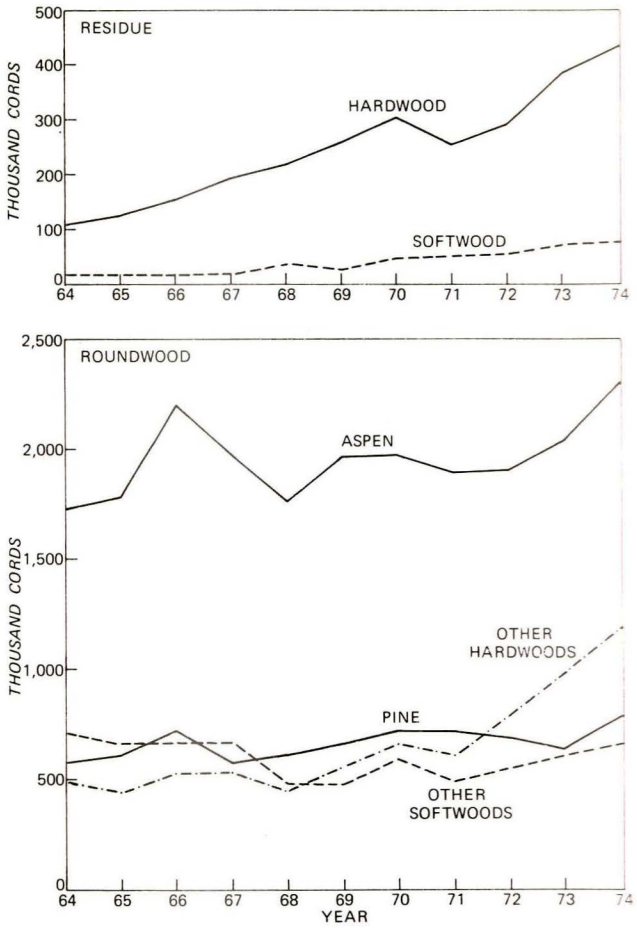


Figure 4.--*Lake States pulpwood production by year and type of wood, 1964-1974.*

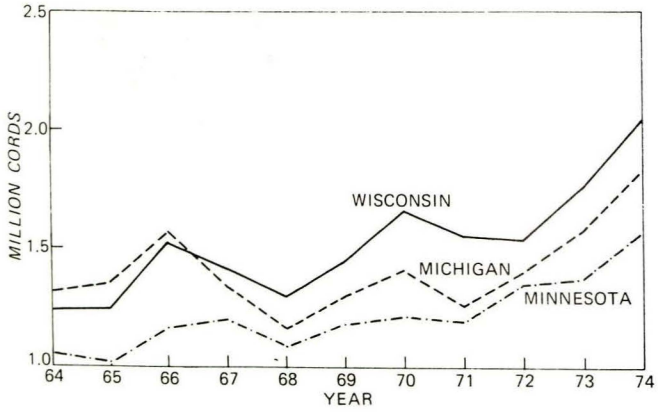


Figure 5.--*Lake States pulpwood production by State, 1964-1974.*

Table 6.--*Production and imports of pulpwood, Central States, 1974*
(In standard cords, unpeeled)[1/]

SPECIES AND DESTINATION	PRODUCTION BY STATES 2/					IMPORTS			TOTAL RECEIPTS
	ILLINOIS	INDIANA	IOWA	MISSOURI	REGIONAL TOTAL	LAKE STATES	OTHER U.S.	TOTAL IMPORTS	
SOFTWOODS									
ILLINOIS	1532	0	0	210	1742	0	0	0	1742
EXPORTED 3/	1174	0	0	146	1320	0	0	0	0
TOTAL	2706	0	0	356	3062	0	0	0	1742
SOFT HARDWOODS									
ILLINOIS	27488	6761	0	835	35084	444	0	444	35528
IND.,IOWA,MO. 4/	3382	12651	12902	12648	41583	2448	0	2448	44031
EXPORTED 3/	3366	3859	0	3182	10407	0	0	0	0
TOTAL	34236	23271	12902	16665	87074	2892	0	2892	79559
HARD HARDWOODS									
ILLINOIS	13478	3819	0	884	18181	0	0	0	18181
IND.,IOWA,MO. 4/	4011	12585	25023	5368	46987	2222	0	2222	49209
EXPORTED 3/	6253	18104	0	10219	34576	0	0	0	0
TOTAL	23742	34508	25023	16471	99744	2222	0	2222	67390
TOTAL ROUNDWOOD									
ILLINOIS	42498	10580	0	1929	55007	444	0	444	55451
IND.,IOWA,MO. 4/	7393	25236	37925	18016	88570	4670	0	4670	93240
EXPORTED 3/	10793	21963	0	13547	46303	0	0	0	0
TOTAL	60684	57779	37925	33492	189880	5114	0	5114	148691
RESIDUE,SOFTWOOD									
ILLINOIS	1033	0	4877	5655	11565	5078	4495	9573	21138
IND.,IOWA,MO. 4/	0	0	0	0	0	0	4800	4800	4800
EXPORTED 3/	0	0	0	2443	2443	0	0	0	0
TOTAL	1033	0	4877	8098	14008	5078	9295	14373	25938
RESIDUE,HARDWOODS									
ILLINOIS	36089	2840	2954	30196	72079	11089	18	11107	83186
IND.,IOWA,MO. 4/	11669	45502	10586	20382	88139	5366	2057	7423	95562
EXPORTED 3/	22735	52874	2286	43918	121813	0	0	0	0
TOTAL	70493	101216	15826	94496	282031	16455	2075	18530	178748
ALL WOOD MATERIAL									
ILLINOIS	79620	13420	7831	37780	138651	16611	4513	21124	159775
IND.,IOWA,MO. 4/	19062	70738	48511	38398	176709	10036	6857	16893	193602
EXPORTED 3/	33528	74837	2286	59908	170559	0	0	0	0
TOTAL	132210	158995	58628	136086	485919	26647	11370	38017	353377

1/ FACTORS USED IN CONVERTING TO STANDARD GREEN CORDS (128 CU. FT.) WERE:
4,500 POUNDS OF SOFT HARDWOOD ROUNDWOOD;
5,000 POUNDS OF HARD HARDWOOD OR CONIFEROUS ROUNDWOOD;
4,100 POUNDS OF SOFTWOOD CHIPS (GREEN);
4,400 POUNDS OF HARDWOOD CHIPS (GREEN);
2,500 POUNDS OF CHIPS (ALL SPECIES DRY)

2/ VERTICAL COLUMNS OF FIGURES UNDER BOX HEADING -PRODUCTION BY STATES- PRESENT THE AMOUNT OF PULPWOOD CUT IN EACH STATE.

3/ PULPWOOD SHIPPED TO MILLS OUTSIDE THE REGION.

4/ COMBINED TO PREVENT DISCLOSURE OF INDIVIDUAL MILL RECEIPTS.

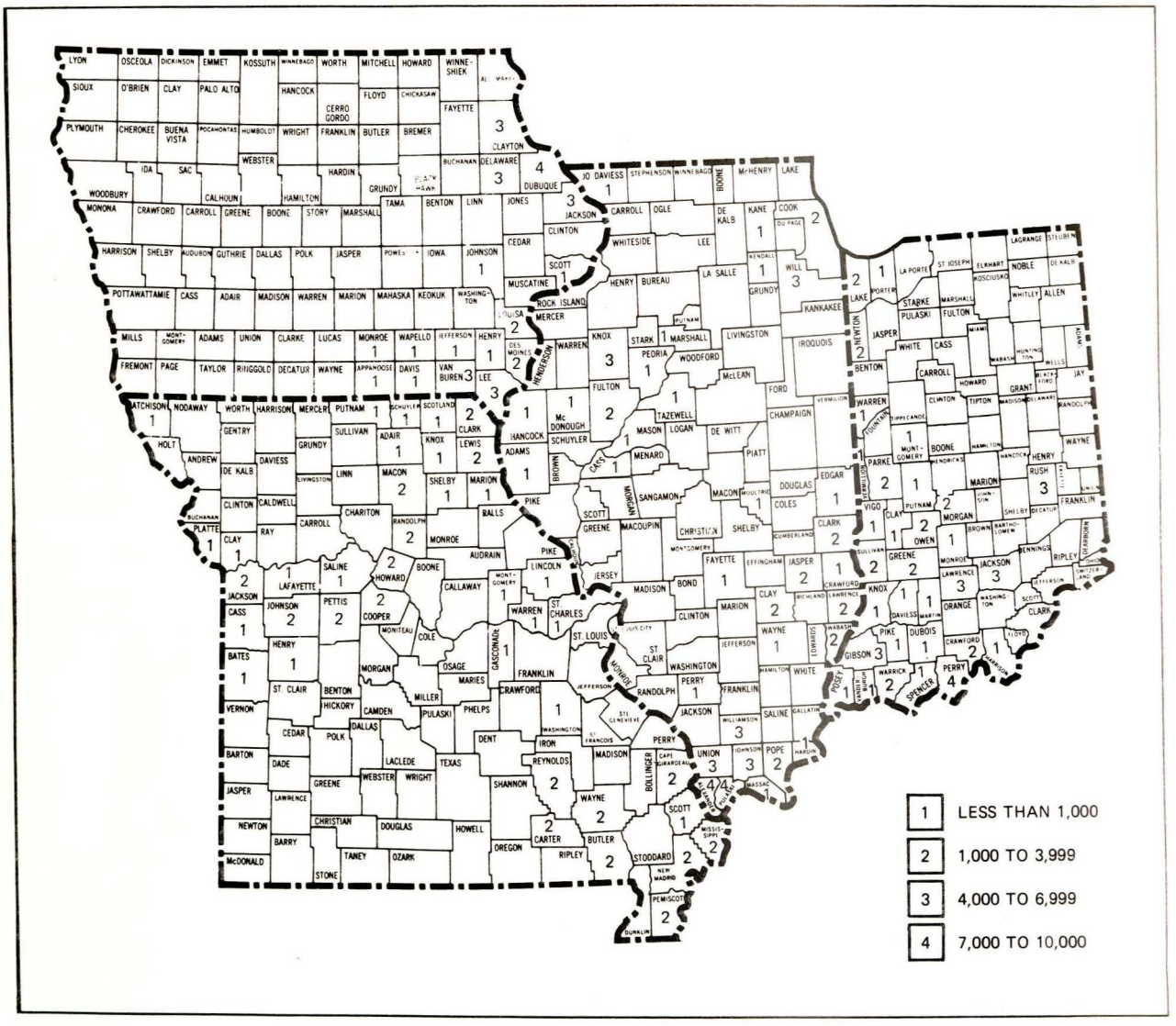


Figure 6.--*Harvest of pulpwood bolts in the Central States by counties, in standard cords, 1974.*

Industry Trends and Analysis

Pulping capacity was 1,415 tons per day, 100 tons below 1973 (table 7). One national firm is converting its large pulping operation in Illinois to use of wastepaper from a combination of pulpwood and wastepaper. Loss of this mill will be temporarily unsettling to its wood supplies. The long term affects on these producers is uncertain because other pulpmills in the area will buy wood from some of them.

Hardwood residue became the dominant source of Central States pulpwood in 1968 and is extending its position yearly (fig. 7). Since 1964 soft hardwood pulpwood harvests declined irregularly while hard hardwood harvests generally rose until 1970, then began declining.

Table 7.--*Active woodpulp mills in the Central States by location, type of pulp produced, and capacity, 1974*

COMPANY	LOCATION	MILL CAPACITY IN TONS PER 24 HOURS 1/				
		TOTAL	SULFITE	SULFATE	GROUNDWOOD AND OTHER MECHANICAL	SEMI-CHEMICAL
ILLINOIS:						
ALTON BOX BOARD CO.	ALTON	200	0	0	0	200
BIRD AND SON , INC.	CHICAGO	40	0	0	40	0
CELOTEX CORP.	PEORIA	190	0	0	190	0
CERTAIN-TEED PRODUCTS CORP.	EAST ST LOUIS	100	0	0	100	0
FLINTKOTE CO , THE	MT CARMEL	40	0	0	40	0
GAF CORP.	JOLIET	100	0	0	100	0
JOHNS-MANVILLE PRODUCTS CORP.	WAUKEGAN	65	0	0	65	0
CELOTEX CORP.	WILMINGTON	30	0	0	30	0
TOTAL.....	8 PLANTS.....	765	0	0	565	200
INDIANA						
WESTON PAPER AND MFG. CO.	TERRE HAUTE	270	0	0	0	270
TOTAL.....	1 PLANT.....	270	0	0	0	270
IOWA						
CELOTEX CORP.	DUBUQUE	90	0	0	0	90
CONSOLIDATED PACKAGING CORP.	FORT MADISON	140	0	0	0	140
TOTAL.....	2 PLANTS.....	230	0	0	0	230
MISSOURI						
GAF CORP.	KANSAS CITY	90	0	0	90	0
HUEBERT FIBREBOARD, INC.	BOONEVILLE	60	0	0	60	0
TOTAL.....	2 PLANTS.....	150	0	0	150	0
ALL STATES	13 PLANTS	1415	0	0	715	700

1/ LOCKWOOD S DIRECTORY OF THE PAPER AND ALLIED INDUSTRIES-1975, AND 1975 DIRECTORY OF THE FOREST PRODUCTS INDUSTRY.
2/ CAPACITY NOT AVAILABLE.

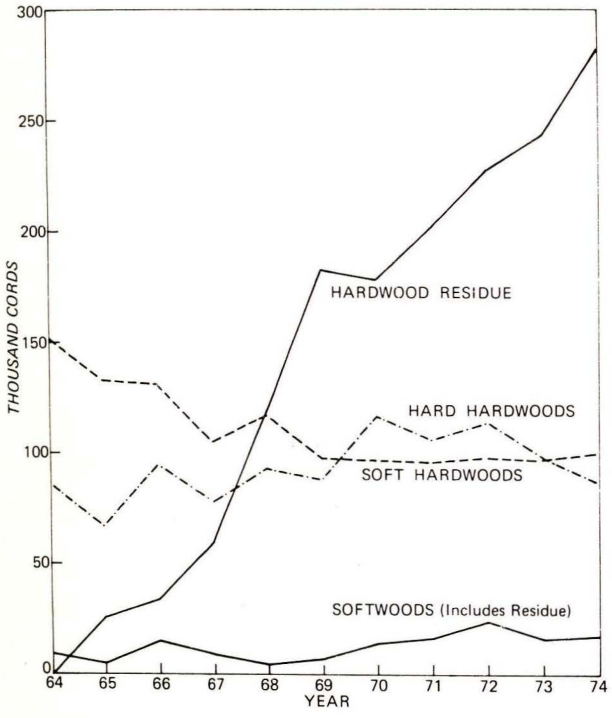


Figure 7.--*Central States pulpwood production by year and type of wood, 1964-1974.*

Hardwood residue has been successfully substituted for roundwood for several reasons. Strict air pollution control laws and enforcement caused many sawmills and veneer mills to find pulpwood markets for their wood residues. Many mills sell residue chips profitably. Pulpmill operators like residue chips because they require less handling and processing than roundwood, use less storage space, and the supply is steady except during deep recessions.

All four Central States increased pulpwood production from 1964 to 1974 (fig. 8). If the average annual rate of growth in output during this period continues in each State, Missouri will be the top producer in 1976.

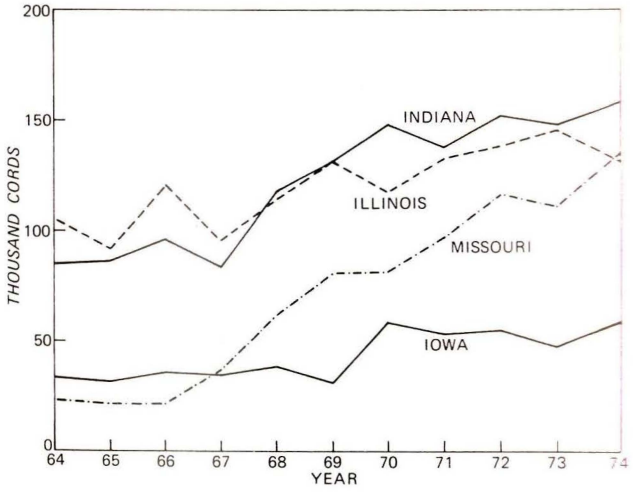


Figure 8.--*Central States pulpwood production by State, 1964-1974.*

* * *

Other detailed pulpwood production, receipt, and trend data are found in the Appendix.

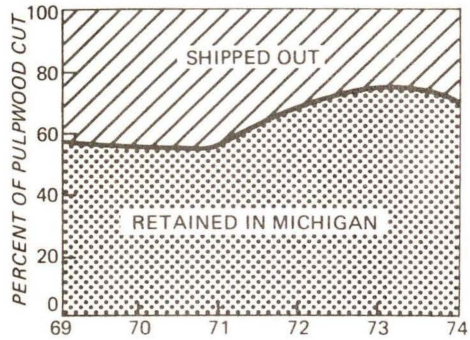
APPENDIX

Table 8.--*Lake States pulpwood production by State of origin and destination, 1970-1974*

(In thousand standard cords)

Michigan

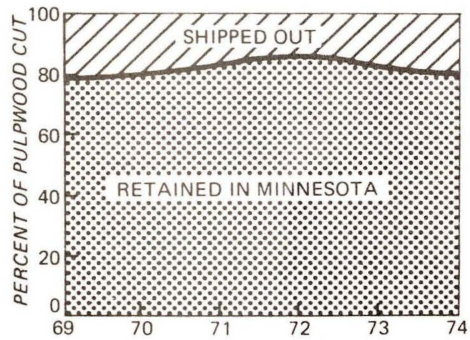
Year	Total cut	Destination of pulpwood			
		Minnesota	Wisconsin	Michigan	Other
1970	1,406	--	610	785	11
1971	1,267	--	567	688	12
1972	1,401	--	470	917	14
1973	1,585	--	418	1,131	36
1974	1,843	--	534	1,290	19
5-Year average	1,500	--	520	962	18



Minnesota

Year	Total cut	Destination of pulpwood			
		Minnesota	Wisconsin	Michigan	Other
1970	1,224	981	219	*	24
1971	1,196	992	188	*	16
1972	1,354	1,168	166	--	20
1973	1,376	1,152	194	*	30
1974	1,578	1,297	262	*	19
5-Year average	1,346	1,118	206	*	22

*Less than 500 cords.



Wisconsin

Year	Total cut	Destination of pulpwood			
		Minnesota	Wisconsin	Michigan	Other
1970	1,656	11	1,627	10	8
1971	1,552	35	1,502	*	15
1972	1,537	28	1,493	2	14
1973	1,758	14	1,671	55	18
1974	2,053	14	2,004	25	10
5-Year average	1,711	20	1,659	18	13

*Less than 500 cords.

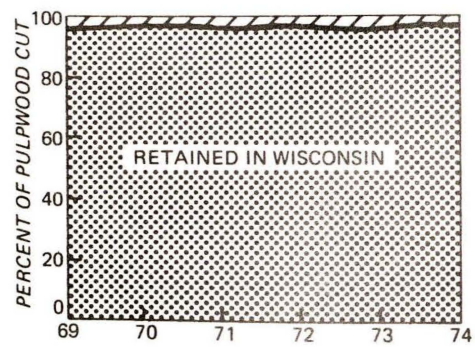


Table 9.--*Lake States pulpwood production by Forest Survey Unit and destination by State, 1974*
(In hundred standard cords, roughwood basis)

MICHIGAN

UNIT	TOTAL CUT	DESTINATION OF PULPWOOD			
		MICHIGAN	MINNESOTA	WISCONSIN	OTHER
E. UPPER PENINSULA	4666	2725	0	1941	0
W. UPPER PENINSULA	6917	3534	0	3270	113
N. LOWER PENINSULA	6141	5966	0	131	44
S. LOWER PENINSULA	700	672	0	0	28
TOTAL	18424	12897	0	5342	185

MINNESOTA

UNIT	TOTAL CUT	DESTINATION OF PULPWOOD			
		MICHIGAN	MINNESOTA	WISCONSIN	OTHER
NORTHEASTERN	9168	0	7540	1529	99
CENTRAL PINE	5637	0	4508	1038	91
RAINY RIVER	936	0	914	22	0
SOUTHEASTERN	34	0	8	26	0
TOTAL	15775	0	12970	2615	190

WISCONSIN

UNIT	TOTAL CUT	DESTINATION OF PULPWOOD			
		MICHIGAN	MINNESOTA	WISCONSIN	OTHER
NORTHEASTERN	8459	234	0	8225	0
NORTHWESTERN	7309	12	22	7275	0
CENTRAL	4131	0	40	4081	10
SOUTHWESTERN	378	0	83	220	75
SOUTHEASTERN	251	0	0	236	15
TOTAL	20528	246	145	20037	100

Table 10.--*Lake States pulpwood production by species, State, and Forest Survey Unit, 1970-1974*
(In thousand standard cords, roughwood basis)

Michigan

Unit	Aspen					Balsam fir				
	Annual Production					Annual Production				
	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974
E. 1/2 Upper Peninsula	124	125	89	93	119	41	26	33	41	40
W. 1/2 Upper Peninsula	180	177	188	225	294	25	25	24	26	32
N. 1/2 Lower Peninsula	288	242	241	275	282	*	1	3	2	2
S. 1/2 Lower Peninsula	4	3	11	10	11	--	--	--	--	--
Total	596	547	529	603	706	66	52	60	69	74
Minnesota										
Northern aspen-birch	326	328	373	407	460	23	20	40	37	52
Northern pine	256	249	264	228	282	22	20	26	28	41
Central hardwood	18	31	52	38	62	*	--	--	*	--
Prairie	--	--	--	--	--	--	--	--	--	--
Total	600	608	689	673	804	45	40	66	65	93
Wisconsin										
Northeastern	430	402	349	380	383	40	35	25	34	49
Northwestern	296	302	311	331	342	29	19	23	32	35
Central	44	31	23	46	71	*	*	1	1	1
Southwestern	*	--	1	3	1	--	--	--	--	--
Southeastern	1	1	*	1	*	--	--	--	--	--
Total	771	736	684	761	797	69	54	49	67	85
Lake States	1,967	1,891	1,902	2,037	2,307	180	146	175	201	252

*Less than 500 cords.

Michigan

Unit	Birch					Hemlock				
	Annual Production					Annual Production				
	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974
E. 1/2 Upper Peninsula	4	1	10	19	24	17	8	17	22	13
W. 1/2 Upper Peninsula	2	3	7	16	35	52	34	33	36	39
N. 1/2 Lower Peninsula	27	19	19	25	25	*	--	--	--	*
S. 1/2 Lower Peninsula	--	--	--	--	*	--	--	--	--	--
Total	33	23	36	60	84	69	42	50	58	52
Minnesota										
Northern aspen-birch	18	9	16	18	15	--	--	--	--	--
Northern pine	12	26	26	23	24	--	--	--	--	--
Central hardwood	1	*	*	1	5	--	--	--	--	--
Prairie	*	--	--	--	*	--	--	--	--	--
Total	31	35	42	42	44	--	--	--	--	--
Wisconsin										
Northeastern	32	22	20	30	38	33	28	26	21	32
Northwestern	42	28	26	40	59	16	13	13	10	9
Central	2	1	*	1	5	3	1	2	1	3
Southwestern	--	--	1	1	*	--	--	--	--	--
Southeastern	--	--	--	--	*	--	--	--	*	1
Total	76	51	47	72	102	52	42	41	32	45
Lake States	140	109	125	174	230	121	84	91	90	97

*Less than 500 cords.

(TABLE 10 CONTINUED ON NEXT PAGE)

Michigan

(TABLE 10 CONTINUED)

Unit	Pine					Spruce				
	Annual Production					Annual Production				
	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974
E. 1/2 Upper Peninsula	57	80	84	67	87	29	22	20	28	19
W. 1/2 Upper Peninsula	34	41	37	36	36	22	22	18	18	20
N. 1/2 Lower Peninsula	145	110	102	88	127	*	1	--	*	1
S. 1/2 Lower Peninsula	4	4	5	12	9	--	--	--	--	--
Total	240	235	228	203	259	51	45	38	46	40
Minnesota										
Northern aspen-birch	136	142	136	125	139	122	119	140	159	154
Northern pine	83	72	79	77	98	59	49	52	54	51
Central hardwood	2	*	1	3	2	*	--	--	*	*
Prairie	--	--	--	*	*	--	--	*	2	2
Total	221	214	216	205	239	181	168	192	215	207
Wisconsin										
Northeastern	72	68	53	43	62	12	9	9	10	13
Northwestern	96	105	99	100	100	4	3	4	6	6
Central	87	93	90	85	125	*	*	*	--	*
Southwestern	2	1	2	3	2	--	--	--	--	--
Southeastern	2	1	2	1	2	--	--	--	--	*
Total	259	268	246	232	291	16	12	13	16	19
Lake States	720	717	690	640	789	248	225	243	277	266

*Less than 500 cords.

Michigan

Unit	Tamarack					Miscellaneous hardwoods				
	Annual production					Annual production				
	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974
E. 1/2 Upper Peninsula	2	1	2	2	1	18	14	50	93	124
W. 1/2 Upper Peninsula	1	2	1	3	1	28	41	97	123	148
N. 1/2 Lower Peninsula	--	--	--	--	--	143	136	153	145	144
S. 1/2 Lower Peninsula	--	--	--	--	--	7	6	9	5	8
Total	3	3	3	5	2	196	197	309	366	424
Minnesota										
Northern aspen-birch	10	8	12	14	25	20	18	29	29	24
Northern pine	25	23	19	17	18	3	*	1	2	6
Central hardwood	--	--	--	1	--	4	12	--	5	6
Prairie	1	1	*	1	*	--	--	--	--	*
Total	36	32	31	33	43	27	30	30	36	36
Wisconsin										
Northeastern	2	2	2	1	1	110	105	128	150	183
Northwestern	2	1	1	*	1	79	67	84	104	140
Central	*	*	*	--	*	99	89	111	136	174
Southwestern	--	--	--	--	--	4	5	5	6	3
Southeastern	--	--	--	--	--	4	3	5	4	6
Total	4	3	3	1	2	296	269	333	400	506
Lake States	43	38	37	39	47	519	496	672	802	966

*Less than 500 cords.

(TABLE 10 CONTINUED ON NEXT PAGE)

Michigan

(TABLE 10 CONTINUED)

Unit	Residue					All species**				
	Annual production					Annual production				
	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974
E. 1/2 Upper Peninsula	37	40	36	35	36	329	317	344	400	466
W. 1/2 Upper Peninsula	63	36	54	80	85	407	381	460	563	692
N. 1/2 Lower Peninsula	12	12	20	21	33	615	521	538	556	614
S. 1/2 Lower Peninsula	40	35	33	40	42	55	48	58	67	70
Total	152	123	143	176	196	1,406	1,267	1,400	1,586	1,842
Minnesota										
Northern aspen-birch	***	***	***	***	48	***	***	***	***	917
Northern pine	***	***	***	***	44	***	***	***	***	564
Central hardwood	***	***	***	***	19	***	***	***	***	94
Prairie	***	***	***	***	1	***	***	***	***	3
Total	83	69	88	108	112	1,224	1,196	1,354	1,377	1,578
Wisconsin										
Northeastern	43	42	43	80	85	774	713	655	749	846
Northwestern	17	17	18	32	39	581	555	579	655	731
Central	20	24	20	31	34	255	239	247	301	413
Southwestern	24	26	27	22	32	30	32	36	35	38
Southeastern	9	8	13	12	16	16	13	20	18	25
Total	113	117	121	177	206	1,656	1,552	1,537	1,758	2,053
Lake States	348	309	352	461	514	4,286	4,015	4,291	4,721	5,473

* Less than 500 cords.

** Includes residue, and small quantity of cedar not shown in other parts of table.

*** Not available.

Table 11.--*Lake States pulpwood production by county and species, 1974*

(Thousand cords, roughwood basis)

MICHIGAN

UNIT AND COUNTY 1/	BALSAM FIR	CEDAR	HEMLOCK	JACK PINE	RED PINE	WHITE PINE	SPRUCE	TAMARACK	ASH	ASPEN	BALSAM POPLAR	BASSWOOD
E. UPPER PENINSULA												
ALGER	1677	239	1439	7471	2283	201	650	15	270	7938	3640	0
CHIPPEWA	4550	787	2376	14484	4661	1408	2208	306	66	7219	1611	0
DELTA	9715	347	2235	15522	3595	1069	3945	84	640	30850	5963	6
LUCE	5454	298	1842	16887	3138	1079	3308	77	211	10894	3911	0
MACKINAC	2980	233	567	1108	909	165	1689	32	163	6297	2354	0
MENOMINEE	9418	65	2049	567	206	56	4209	246	698	43116	2479	1
SCHOOLCRAFT	6137	598	3092	6792	4739	979	2824	183	381	12499	4659	4
TOTAL	39931	2567	13600	62831	19531	4957	18833	943	2429	118813	24617	11
W. UPPER PENINSULA												
BARAGA	2272	405	6965	1809	1613	585	1205	87	1366	34529	703	0
DICKINSON	3750	147	978	2396	549	250	3130	349	707	68682	2572	11
GOGEBIC	1864	11	10053	660	53	10	755	7	1233	36851	49	58
HOUGHTON	2376	496	8869	1047	1934	532	756	54	411	17347	25	1
IRON	13509	102	2439	2788	1171	253	8200	57	933	51003	336	19
KEWEENAW	86	0	441	0	0	0	85	0	243	3397	2	0
MARQUETTE	7120	933	6534	13697	4128	2159	5573	216	739	55810	2081	11
ONTONAGON	592	4	2632	2	11	4	513	0	1399	26589	58	0
TOTAL	31569	2098	38911	22399	9459	3793	20217	770	7031	294208	5826	100
N. LOWER PENINSULA												
ALCONA	282	0	0	4237	22	22	22	0	133	31182	1340	333
ALPENA	599	0	0	3363	907	22	87	0	155	5564	311	287
ANTRIM	0	0	0	0	0	0	0	0	0	71	0	0
ARENAC	0	0	0	0	0	0	0	0	0	87	0	22
BENZIE	0	0	0	0	0	0	0	0	260	13546	0	0
CHEBOYGAN	121	0	0	2219	0	0	18	0	44	9071	488	89
CLARE	0	0	0	1550	0	0	0	0	0	19806	0	0
CRAWFORD	0	0	0	7850	22	0	0	0	40	1963	0	46
GLADWIN	0	0	0	0	0	0	0	0	69	8254	663	54
GRAND TRAVERSE	0	0	0	551	0	0	0	0	104	8325	0	0
IOSCO	87	0	0	16663	370	0	0	0	0	672	67	0
ISABELLA	0	0	0	0	0	0	0	0	20	825	0	0
KALKASKA	0	0	0	2597	0	0	0	0	26	7072	0	0
LAKE	0	0	0	10568	0	0	0	0	445	13427	0	0
LEELANAU	0	0	0	0	0	0	0	0	0	1924	0	0
MANISTEE	0	0	0	8309	0	0	0	0	325	14674	0	17
MASON	0	0	0	0	265	0	0	0	312	10422	0	0
MECOSTA	0	0	0	1485	396	0	0	0	12	14205	0	0
MIDLAND	0	0	0	0	0	0	0	0	0	210	0	0
MISSAUKEE	0	0	0	584	0	0	0	0	52	10768	0	0
MONTMORENCY	392	0	0	12711	1447	169	125	0	232	18232	799	377
NEWAYGO	0	0	0	0	3797	0	0	0	47	10711	0	0
OCEANA	0	0	0	0	1824	0	0	0	24	3366	0	0
OGEMAW	0	0	0	0	0	0	0	0	22	4099	44	22
OSCEOLA	0	0	0	0	69	0	0	0	26	13501	0	0
OSCODA	584	0	0	17198	434	0	228	0	159	30502	466	222
OTSEGO	0	0	0	1061	993	0	0	0	0	157	0	0
PRESQUE ISLE	803	0	22	4168	623	0	109	0	133	11188	377	133
ROSCOMMON	0	0	0	10614	93	0	0	0	35	12657	3	5
WEXFORD	0	0	0	0	9321	0	0	0	52	5744	0	0
TOTAL	2868	0	22	105728	20583	213	589	0	2727	282225	4558	1607
S. LOWER PENINSULA												
ALLEGAN	0	0	0	0	186	0	0	0	2	1097	0	0
CASS	0	0	0	0	468	0	0	0	0	0	0	0
GRATIOT	0	0	0	0	0	0	0	0	5	1226	0	0
IONIA	0	0	0	0	0	0	0	0	0	161	0	0
KALAMAZOO	0	0	0	0	0	0	0	0	0	225	0	0
KENT	0	0	0	0	13	0	0	0	1	94	0	0
MONTCALM	0	0	0	0	48	0	0	0	38	7746	0	0
MUSKEGON	0	0	0	0	6060	0	0	0	10	334	0	0
OTTAWA	0	0	0	0	2432	0	0	0	7	11	0	0
ST. JOSEPH	0	0	0	0	0	0	0	0	0	9	0	0
VAN BUREN	0	0	0	0	0	0	0	0	0	196	0	0
TOTAL	0	0	0	0	9207	0	0	0	63	11099	0	0
STATE TOTAL	74368	4665	52533	190958	58780	8963	39639	1713	12250	706345	35001	1718

(TABLE 11 CONTINUED ON NEXT PAGE)

(TABLE 11 CONTINUED)

UNIT AND COUNTY 1/	BEECH	WHITE BIRCH	YELLOW BIRCH	COTTON-WOOD	ELM	HICKORY	HARD MAPLE	SOFT MAPLE	RED OAK	WHITE OAK	OTHER HARD-WOODS	ALL SPECIES
E. UPPER PENINSULA												
ALGER	6839	2625	853	0	794	0	6158	4318	118	0	1584	49112
CHIPPEWA	1351	1040	177	0	163	0	1256	888	22	0	283	44856
DELTA	4054	4311	770	0	1265	0	5227	4131	106	17	1145	94997
LUCE	5574	3070	768	0	558	0	5024	3557	91	0	1084	66825
MACKINAC	1958	1872	386	0	405	0	2337	1697	47	0	477	25676
MENOMINEE	2594	3035	496	0	4582	95	6679	3228	96	17	562	84494
SCHOOLCRAFT	5062	3669	839	0	1059	0	5203	4348	88	5	1297	64457
TOTAL	27432	19622	4289	0	8826	95	31884	22167	568	39	6432	430417
W. UPPER PENINSULA												
BARAGA	8	2794	2575	0	2031	0	13729	6415	401	0	1252	80744
DICKINSON	4	4473	1230	0	1153	0	8330	4249	746	0	1428	105134
GOGEBIC	1	2396	2559	0	2967	0	7849	5090	30	0	544	73040
HOUGHTON	0	583	590	0	415	0	2139	1605	19	0	50	39249
IRON	3	1657	1519	0	4619	0	14521	3757	135	0	1076	108097
KEWEENAW	0	448	403	0	238	0	418	449	1	0	2	6213
MARQUETTE	37	4288	2342	0	1535	0	15030	6070	1110	0	2093	131506
ONTONAGON	1	3414	4340	0	2848	0	11846	8049	28	0	104	62434
TOTAL	54	20053	15558	0	15806	0	73862	35684	2470	0	6549	606417
N. LOWER PENINSULA												
ALCONA	0	2950	0	0	200	0	140	2422	5419	531	0	49235
ALPENA	20	1882	0	0	400	0	180	2462	1391	55	0	17685
ANTRIM	0	0	0	0	0	0	0	0	4	0	0	75
ARENAC	0	38	0	0	0	0	0	44	0	0	0	191
BENZIE	260	626	52	0	0	0	312	2080	3123	198	260	20717
CHEBOYGAN	0	2554	0	0	22	0	40	1465	348	0	0	16479
CLARE	0	756	0	0	0	0	0	634	3195	46	0	25987
CRAWFORD	189	55	0	0	210	0	68	68	177	18	0	10706
GLADWIN	352	1389	0	104	333	0	84	325	1144	167	52	12990
GRAND TRAVERSE	208	1009	61	0	0	0	520	1040	1560	156	208	13742
IOSCO	0	104	0	0	0	0	0	0	97	18	0	18078
ISABELLA	10	72	0	0	0	0	46	49	910	52	10	1994
KALKASKA	31	285	21	0	0	0	104	520	2082	0	26	12764
LAKE	416	225	43	0	0	0	265	2276	11584	577	416	40242
LEELANAU	10	73	21	0	0	0	44	10	21	0	0	2103
MANISTEE	686	502	88	0	68	0	962	2205	4703	1040	520	34099
MASON	312	728	19	0	0	0	312	1560	4160	312	312	18714
MECOSTA	0	130	0	0	0	0	24	288	2069	160	0	18769
MIDLAND	0	1	0	0	0	0	1	0	24	1	0	237
MISSAUKEE	52	936	0	0	0	0	52	624	1080	208	52	14408
MONTMORENCY	51	2483	0	0	22	0	212	2720	5748	253	10	45983
NEWAYGO	26	63	0	0	0	0	68	1298	10683	130	26	26849
OCEANA	0	48	0	0	0	0	48	199	2248	48	0	7805
OGEMAW	0	361	0	22	0	0	20	135	256	0	0	4981
OSCEOLA	26	521	0	0	0	0	27	3054	2993	55	26	20298
OSCODA	72	2943	61	0	44	0	1012	2040	10483	512	26	66986
OTSEGO	0	60	0	0	0	0	0	68	0	0	0	2339
PRESQUE ISLE	20	2508	0	0	111	0	20	1620	732	0	0	22567
ROSCOMMON	51	815	0	0	28	0	39	580	9830	148	26	34924
WEXFORD	0	520	52	0	0	0	104	814	3134	129	0	19870
TOTAL	2792	24637	418	126	1438	0	4704	30600	89198	4814	1970	581817
S. LOWER PENINSULA												
ALLEGAN	0	4	0	0	0	0	4	398	742	4	0	2437
CASS	0	0	0	0	0	0	0	0	0	0	0	468
GRATIOT	0	10	0	0	0	0	10	25	486	10	0	1772
IONIA	0	0	0	0	0	0	0	0	0	0	0	161
KALAMAZOO	0	0	0	0	0	0	0	257	23	0	0	505
KENT	0	1	0	0	0	0	1	3	62	1	0	176
MONTCALM	0	77	0	0	0	0	77	273	3444	77	0	11780
MUSKEGON	0	20	0	0	0	0	20	30	899	20	0	7393
OTTAWA	0	14	0	0	0	0	14	21	628	14	0	3141
ST. JOSEPH	0	0	0	0	0	0	0	0	0	0	0	9
VAN BUREN	0	0	0	0	0	0	0	11	11	0	0	218
TOTAL	0	126	0	0	0	0	126	1018	6295	126	0	28060
STATE TOTAL	30278	64438	20265	126	26070	95	110576	89469	98531	4979	14951	1646711

(TABEL 11 CONTINUED ON NEXT PAGE)

(TABLE 11 CONTINUED)

MINNESOTA

UNIT AND COUNTY 1/	BALSAM FIR	CEDAR	HEMLOCK	JACK PINE	RED PINE	WHITE PINE	SPRUCE	TAMARACK	ASH	ASPEN	BALSAM POPLAR	BASSWOOD
NORTHERN ASPEN-BIRCH												
CARLTON	366	0	0	2161	24	0	321	92	0	22368	0	0
COOK	3152	0	0	2811	118	0	14570	0	0	8001	0	0
KOOCHICHING	28814	0	0	14381	2277	4006	76393	19276	0	193457	15640	0
LAKE	3541	0	0	22666	1605	0	23324	57	0	16832	0	0
ST.LOUIS	15833	0	0	85638	1641	1231	39085	5208	4	219666	7016	0
TOTAL	51706	0	0	127657	5665	5237	153693	24633	4	460324	22656	0
NORTHERN PINE												
AITKIN	1026	0	0	707	0	0	1086	4582	17	29251	0	0
BECKER	418	0	0	2014	0	0	86	397	0	1093	0	1
BELTRAMI	12057	0	0	13032	1089	0	9025	1722	167	54444	58	0
CASS	2477	0	0	16050	827	1182	1465	444	42	35314	0	0
CLEARWATER	1642	0	0	7295	774	0	1686	3549	35	14419	0	0
CROW WING	78	0	0	10062	0	0	25	0	24	11568	0	0
HUBBARD	571	0	0	12997	0	0	442	395	4	36105	0	0
ITASCA	21972	0	0	10871	647	1138	20026	5589	42	88878	852	0
LAKE OF THE WOODS	319	0	0	4874	0	0	12999	289	0	4806	154	0
MAHNOMEN	0	0	0	185	0	0	0	48	0	267	0	0
ROSEAU	45	0	0	8389	0	0	4340	819	0	4050	0	0
WADENA	0	0	0	6243	0	0	18	0	0	2003	0	0
TOTAL	40605	0	0	92719	3337	2320	51198	17834	331	282198	1064	1
CENTRAL HARDWOOD												
BENTON	0	0	0	0	0	0	0	0	0	163	0	0
ISANTI	0	0	0	0	0	0	0	0	0	500	0	0
KANABEC	0	0	0	0	0	0	0	0	0	3854	0	0
MILLE LACS	0	0	0	0	0	0	0	26	0	15563	0	0
MORRISON	0	0	0	1007	0	0	0	0	0	25681	0	0
OTTERTAIL	0	0	0	0	0	0	0	42	0	0	0	0
PINE	0	0	0	1115	0	0	61	24	0	13540	0	0
WABASHA	0	0	0	0	0	0	0	0	0	0	0	0
WINONA	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	2122	0	0	61	92	0	61301	0	0
PRAIRIE												
NORMAN	0	0	0	42	0	0	0	0	0	0	0	0
POLK	0	0	0	100	119	0	1610	712	2	0	0	0
TOTAL	0	0	0	142	119	0	1610	712	2	0	0	0
STATE TOTAL	92311	0	0	222640	9121	7557	206562	43271	337	803823	23720	1

(TABLE 11 CONTINUED ON NEXT PAGE)

(TABLE 11 CONTINUED)

UNIT AND COUNTY 1/	BEECH	WHITE BIRCH	YELLOW BIRCH	COTTON-WOOD	ELM	HICKORY	HARD MAPLE	SOFT MAPLE	RED OAK	WHITE OAK	OTHER HARD-WOODS	ALL SPECIES
NORTHERN ASPEN-BIRCH												
CARLTON	0	3602	0	0	0	0	29	14	0	0	0	28977
COOK	0	21	0	0	0	0	6	1	0	0	0	28680
KOOCHICHING	0	1219	0	0	645	0	12	16	646	0	0	356782
LAKE	0	3466	0	0	0	0	0	0	0	0	0	71491
ST.LOUIS	0	7200	4	0	6	0	21	83	21	0	0	382657
TOTAL	0	15508	4	0	651	0	68	114	667	0	0	868587
NORTHERN PINE												
AITKIN	0	3446	1	0	19	0	22	7	1592	0	4	41760
BECKER	0	14	0	0	1	0	1	0	10	10	0	4045
BELTRAMI	0	6694	7	0	294	0	394	69	51	2	1	99106
CASS	0	3958	8	0	28	0	60	54	34	0	2	61945
CLEARWATER	0	1080	0	0	57	0	103	9	0	0	0	30649
CROW WING	0	1443	2	0	36	0	4	3	1185	0	2	24432
HUBBARD	0	542	0	0	7	0	4	11	6	0	0	51084
ITASCA	0	6449	14	0	64	0	241	63	8	2	5	156861
LAKE OF THE WOODS	0	0	0	0	0	0	0	0	0	0	0	23441
MAHNOMEN	0	0	0	0	0	0	0	0	0	0	0	500
ROSEAU	0	0	0	0	0	0	0	0	0	0	0	17643
WADENA	0	318	0	0	0	0	0	0	0	0	0	8582
TOTAL	0	23944	32	0	506	0	829	216	2886	14	14	520048
CENTRAL HARDWOOD												
BENTON	0	0	0	0	0	0	0	0	0	0	0	163
ISANTI	0	0	0	0	0	0	0	0	0	0	0	500
KANABEC	0	711	0	0	0	0	0	0	735	0	0	7300
MILLE LACS	0	1665	0	0	0	0	0	0	735	0	0	17989
MORRISON	0	1347	0	0	0	0	0	0	735	0	0	28770
OTTERTAIL	0	0	0	0	0	0	0	0	0	0	0	42
PINE	0	799	0	0	0	0	0	0	250	0	0	15789
WABASHA	0	0	0	312	312	0	0	0	312	0	312	1248
WINONA	0	0	0	693	693	0	0	0	693	0	693	2772
TOTAL	0	4522	0	1005	1005	0	0	0	3460	0	1005	74573
PRAIRIE												
NORMAN	0	0	0	0	0	0	0	0	0	0	0	42
POLK	0	21	0	0	3	0	0	0	0	0	0	2567
TOTAL	0	21	0	0	3	0	0	0	0	0	0	2609
STATE TOTAL	0	43995	36	1005	2166	0	897	330	7013	14	1019	1465817

(TABLE 11 CONTINUED ON NEXT PAGE)

(TABLE 11 CONTINUED)

WISCONSIN

UNIT AND COUNTY 1/	BALSAM FIR	CEDAR	HEMLOCK	JACK PINE	RED PINE	WHITE PINE	SPRUCE	TAMARACK	ASH	ASPEN	BALSAM POPLAR	BASSWOOD
NORTHEASTERN												
FLORENCE	2102	45	678	2971	783	220	684	18	386	35123	71	83
FOREST	9318	193	4182	1445	3838	369	1932	175	1212	39233	492	271
LANGLADE	2471	0	1116	653	613	67	298	80	1650	51230	0	173
LINCOLN	3057	0	1642	3748	3825	525	516	225	3726	62373	0	2713
MARINETTE	6891	3	923	8313	724	218	2629	120	1422	39850	844	66
OCONTO	512	1	1140	6371	989	136	205	5	202	27376	66	1
ONEIDA	17425	0	3276	6706	7755	664	5601	234	3647	90181	8	502
SHAWANO 2/	254	0	16714	143	915	78	183	0	1081	2552	0	5
VILAS	7058	0	2125	6608	2711	656	1464	0	266	35472	0	132
TOTAL	49088	242	31796	36958	22153	2933	13512	857	13592	383390	1481	3946
NORTHWESTERN												
ASHLAND	14956	0	1214	3534	2257	325	2520	0	3835	36308	0	229
BARRON	0	0	0	30	3	2	0	0	73	1645	0	0
BAYFIELD	2949	0	89	16247	4455	597	153	0	1187	57438	0	72
BURNETT	31	0	0	15865	2531	747	29	174	12	6625	0	0
DOUGLAS	145	0	0	21342	1271	131	33	48	258	31655	0	8
IRON	2690	0	2153	243	250	97	273	0	932	32954	0	446
POLK	0	0	0	3015	711	215	0	21	2	213	0	0
PRICE	9725	0	1534	1267	3369	340	1761	270	4697	62998	0	680
RUSK	10	0	863	55	22	2	28	0	1053	12571	0	208
SAWYER	3270	0	296	2287	3227	368	800	34	2721	35868	0	160
TAYLOR	1535	0	2904	345	959	70	85	19	3384	28791	0	295
WASHBURN	0	0	0	10862	2282	481	0	0	624	35153	0	14
TOTAL	35311	0	9053	75092	21337	3375	5682	566	18778	342219	0	2112
CENTRAL												
ADAMS	0	0	0	17852	6763	1272	0	18	296	1304	0	56
CHIPPEWA	68	0	158	280	157	3	0	40	241	5554	0	15
CLARK	0	0	32	1674	1820	273	0	0	1446	5786	0	161
EAU CLAIRE	0	0	0	2998	1545	329	0	0	0	470	0	0
JACKSON	0	0	0	13810	6002	1095	0	0	200	2537	0	7
JUNEAU	0	0	0	12379	4208	890	11	5	340	6272	0	82
MARATHON	645	0	2633	1203	658	206	46	0	2561	30639	0	33
MARQUETTE	0	0	0	996	413	95	0	0	441	131	0	21
MONROE	0	0	0	2309	1017	176	0	0	48	591	0	1
PORTAGE	60	0	251	3129	2853	603	43	5	572	5822	0	94
WAUPACA	12	0	47	543	333	87	0	10	257	6878	0	10
WAUSHARA	0	0	0	3411	1729	320	0	5	151	133	0	8
WOOD	8	0	28	23401	6309	1524	1	51	2369	4827	0	80
TOTAL	793	0	3149	83985	33807	6873	101	134	8922	70944	0	568
SOUTHWESTERN												
CRAWFORD	0	0	0	0	0	0	0	0	0	12	0	0
DUNN	0	0	0	122	320	23	0	0	11	0	0	0
GRANT	0	0	0	0	0	0	0	0	99	520	0	113
IOWA	0	0	0	8	44	3	0	0	0	0	0	0
LACROSSE	0	0	0	181	395	32	0	0	0	0	0	0
PEPIN	0	0	0	71	112	9	0	0	0	0	0	0
RICHLAND	0	0	0	50	83	7	0	0	0	0	0	0
ST.CROIX	0	0	0	6	16	1	0	0	0	0	0	0
SAUK	0	0	0	116	306	22	0	0	1	0	0	0
TREMPEALEAU	0	0	0	21	35	3	0	0	0	0	0	0
VERNON	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	575	1311	100	0	0	111	532	0	113
SOUTHEASTERN												
BROWN	0	0	0	355	0	0	0	0	0	83	0	0
COLUMBIA	0	0	0	171	1693	75	0	0	178	0	0	3
DANE	0	0	0	0	0	0	13	0	8	0	0	0
FOND DU LAC	0	0	0	0	0	0	0	0	0	23	0	0
GREEN LAKE	0	0	0	44	21	3	0	0	38	5	0	0
MILWAUKEE	0	0	0	0	0	0	0	0	0	0	0	0
OUTAGAMIE	0	0	673	11	96	6	0	0	2	15	0	0
WASHINGTON	0	0	0	0	0	0	0	0	87	0	0	0
WINNEBAGO	0	0	0	0	0	0	0	0	0	21	0	0
TOTAL	0	0	673	581	1810	84	13	0	313	147	0	3
STATE TOTAL	85192	242	44671	197191	80418	13365	19308	1557	41716	797232	1481	6742

(TABLE 11 CONTINUED ON NEXT PAGE)

(TABLE 11 CONTINUED)

UNIT AND COUNTY 1/	BEECH	WHITE BIRCH	YELLOW BIRCH	COTTON-WOOD	ELM	HICKORY	HARD MAPLE	SOFT MAPLE	RED OAK	WHITE OAK	OTHER HARD-WOODS	ALL SPECIES
NORTHEASTERN												
FLORENCE	0	653	882	0	3400	0	5371	882	161	0	228	54741
FOREST	848	1712	1218	0	6240	0	11612	2153	148	0	1490	88081
LANGLADE	511	591	890	0	8615	0	9967	2783	460	0	1294	83462
LINCOLN	0	1420	2351	0	10550	102	12464	4904	1030	0	1067	116238
MARINETTE	767	1282	33	0	4814	0	3409	2608	861	85	255	76117
OCONTO	106	962	153	0	676	0	970	1044	64	10	37	41026
ONEIDA	0	8067	3129	0	4185	0	8740	8448	4218	0	1131	173917
SHAWANO 2/	2829	219	55	0	13665	798	1795	743	148	1	823	43001
VILAS	0	11147	2642	0	1770	0	8627	1831	1216	73	378	84176
TOTAL	5061	26053	11353	0	53915	900	62955	25396	8306	169	6703	760759
NORTHWESTERN												
ASHLAND	0	4460	1521	0	4985	0	9144	5047	721	85	343	91484
BARRON	0	22	90	0	137	0	266	76	53	0	24	2421
BAYFIELD	0	12438	581	0	1569	0	3036	1526	1034	95	134	103600
BURNETT	0	29	39	0	46	0	113	51	49	6	4	26351
DOUGLAS	0	1600	136	0	422	0	516	256	107	9	60	57997
IRON	0	3362	1066	0	1839	0	3705	1089	285	4	235	51623
POLK	0	10	2	0	7	0	10	10	16	3	0	4235
PRICE	0	11328	3840	0	6604	0	11025	4503	838	41	622	125442
RUSK	0	659	801	0	2341	0	3012	1223	410	23	238	23519
SAWYER	0	8208	961	0	3989	0	5575	2985	1526	232	342	72849
TAYLOR	0	3300	2697	0	14084	149	10752	5650	1892	47	404	77362
WASHBURN	0	965	389	0	1035	0	1412	671	586	56	162	54692
TOTAL	0	46381	12123	0	37058	149	48566	23087	7517	601	2568	691575
CENTRAL												
ADAMS	1	142	28	0	670	0	352	892	10861	2283	166	42956
CHIPPEWA	104	652	135	0	1266	0	588	535	532	75	96	10499
CLARK	2	335	286	0	4075	0	2930	4327	9942	2620	337	36046
EAU CLAIRE	0	0	0	0	0	0	0	0	0	0	0	5342
JACKSON	1	163	32	0	571	0	269	515	3064	579	37	28882
JUNEAU	0	0	0	0	807	0	345	915	5310	1398	189	33151
MARATHON	1	712	2070	0	21806	259	9640	10342	6182	23	350	90009
MARQUETTE	0	1	0	0	1493	0	301	988	2747	620	102	8349
MONROE	0	52	10	0	117	0	65	138	438	85	0	5047
PORTAGE	0	196	83	0	2592	0	1005	1803	4415	1254	156	24936
WAUPACA	0	18	30	0	836	0	255	636	433	81	31	10497
WAUSHARA	0	4	1	0	522	0	140	338	575	143	35	7515
WOOD	1	412	84	0	5527	0	2427	5706	17989	5162	134	76040
TOTAL	110	2687	2759	0	40282	259	18317	27135	62488	14323	1633	379269
SOUTHWESTERN												
CRAWFORD	0	0	0	0	0	0	0	0	0	0	0	12
DUNN	0	14	0	0	37	0	22	24	0	0	0	573
GRANT	0	251	0	18	212	0	186	125	1408	529	0	3461
IOWA	0	0	0	0	0	0	0	0	0	0	0	55
LACROSSE	0	0	0	0	0	0	0	0	6	1	0	615
PEPIN	0	0	0	0	0	0	0	0	0	0	0	192
RICHLAND	0	0	0	0	0	0	0	0	0	0	0	140
ST.CROIX	0	0	0	0	0	0	0	0	0	0	0	23
SAUK	0	2	0	0	5	0	3	2	304	53	0	814
TREMPEALEAU	0	0	0	0	0	0	0	0	35	6	0	100
VERNON	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	267	0	18	254	0	211	151	1753	589	0	5985
SOUTHEASTERN												
BROWN	0	0	0	0	0	0	0	0	0	0	0	438
COLUMBIA	8	12	3	0	502	0	122	97	1571	349	106	4890
DANE	0	0	2	0	34	0	18	4	26	0	55	160
FOND DU LAC	0	0	0	0	0	0	0	0	0	0	0	23
GREEN LAKE	10	9	2	0	70	0	36	22	0	0	0	260
MILWAUKEE	0	0	0	0	1494	0	0	0	0	0	0	1494
OUTAGAMIE	0	10	2	0	7	0	11	10	0	0	0	843
WASHINGTON	0	2	18	0	322	0	105	47	36	0	110	727
WINNEBAGO	0	0	0	0	0	0	0	0	0	0	0	21
TOTAL	18	33	27	0	2429	0	292	180	1633	349	271	8856
STATE TOTAL	5189	75421	26262	18	133938	1308	130341	75949	81697	16031	11175	1846444

1/ INCLUDES ONLY THOSE COUNTIES THAT SUPPLIED PULPWOOD IN 1974.
2/ INCLUDES MENOMINEE COUNTY.

Table 12.--*Central States pulpwood production by State and destination, 1970-1974*
(In thousand standard cords)

Year	Illinois			Indiana			Iowa			Missouri		
		Destination			Destination			Destination			Destination	
	Total	Central States	Other States	Total	Central States	Other States	Total	Central States	Other States	Total	Central States	Other States
1970	118	110	8	148	95	53	58	57	1	82	57	25
1971	133	99	34	139	77	62	53	52	1	97	62	35
1972	139	103	36	152	71	81	55	54	1	117	78	39
1973	146	124	22	148	80	68	48	46	2	112	63	49
1974	131	98	33	159	84	75	59	57	2	137	77	60

Table 13.--*Trends in receipts of roundwood and residue as pulpwood, Central States, 1970-1974*
(In thousand standard cords, unpeeled)

Type of Material and Area	1970	1971	1972	1973	1974
Roundwood					
Illinois	62	57	67	70	56
Indiana, Iowa, Missouri	131	107	99	106	93
Total	193	164	166	176	149
Residue					
Illinois	100	107	116	122	104
Indiana, Iowa, Missouri	68	67	74	81	100
Total	168	174	190	203	204
All Material	361	338	356	379	353

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OXFORD: 861.0(77):792. KEY WORDS: roundwood, residue, receipts, Lake States, Central States.

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